

Flore des Dames de Genève: A Visual Heritage of Collective Work¹

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Abstract

The famous Swiss naturalist Augustin-Pyramus de Candolle (1778–1841) possessed a precious collection containing a series of botanical icons, which is now usually referred to as *Flore des Dames*. A duplicate of *Flore du Mexique*, it originated from a multi-year natural history expedition authorized by the Spanish Court at the end of the eighteenth century. This collection stands out for two main reasons: first, it served as a crucial visual resource in scientific research for 160 years, during which the original collection was inaccessible to the public; second, it was the work of over one hundred copiers, most of them amateur women, who completed the task under considerable time pressure. This article focuses on the fundamental constitution and creation of *Flore des Dames*, the taxonomic project of Candolle and his associates, and the role of female painters, including the social context of their contribution.

Keywords: *Flore des Dames*, Botanical Expedition, Botanical Drawings, Augustin-Pyramus de Candolle, Elite Genevan Women

“Montrez moi les moins bons, ce sont ceux qui prouvent que ces résultats sont dus à l’esprit public et non à l’amour-propre.”² With these words, the distinguished English writer Maria Edgeworth (1768–1849) expressed her admiration for the painters when Augustin-Pyramus de Candolle, then professor of natural history at the Academy of Geneva, showed her highlights from a collection of paintings of American plants. It was 1820, three years after the collection had been completed, and Edgeworth had made a special detour to see it while traveling through Switzerland.³

This thirteen-volume work primarily comprises around 1,200 illustrations, a preface written by Candolle, a catalog of the depicted plants, a roster of the painters who contributed to it, and an article published by Alphonse de Candolle (1806–1893), the son of Augustin-Pyramus de Candolle.⁴ The collection is currently housed in the library of the Geneva Conservatoire et Jardin botaniques

1 I thank Simona Boscani Leoni for reminding me of this material. As part of an ongoing doctoral dissertation, the analysis of *Flore des Dames* in this article is preliminary. More study will be undertaken in the future.

2 Augustin-Pyramus de Candolle, *Mémoires et Souvenirs de Augustin-Pyramus de Candolle*, ed. by Jean-Daniel Candaux, Jean-Marc Drouin, Patrick Bungener, René Sigrist, Genève, Georg Éditeur, 2004, 343.

3 Maria Edgeworth, *The Life and Letters of Maria Edgeworth*, ed. by Augustus J. C. Hare, Gloucester, Dodo Press, 2007, 243.

4 Subsequently, Candolle refers to the father, while Alphonse refers to the son.

de Genève (CJBG). While Candolle titled his preface *Flore du Mexique*, since the 1980s the collection is more commonly known as *Flore des Dames de Genève*.⁵

Despite 305 original pictures, *Flore des Dames* was largely derivative, as most of the watercolor paintings were duplicates of illustrations from *Flore du Mexique*, which had been produced during a Spanish expedition at the end of the eighteenth century and is currently held at Hunt Library at Carnegie Mellon University.⁶ Even though *Flore des Dames* consists of duplicates of selected illustrations from *Flore du Mexique*, it nonetheless represents a multifaceted contribution to the production of botanical knowledge. This collective work has four critical dimensions: the fieldwork undertaken by naturalists; the paintings produced by artists in nature; the meticulous identification, classification, and description of the plants conducted by cabinet naturalists like Candolle and his associates; and the significant contribution made by amateurs, especially numerous women.⁷ Taken together, these aspects highlight the collaborative nature of botanical discovery and documentation.

Particularly, during the lengthy period when the original paintings could not be located, *Flore des Dames* was a well-known systematic resource, playing a significant role in the history of taxonomy. Although “the pictorial work of the Spanish natural history expeditions remained largely unseen until the second half of the twentieth century,”⁸ the *Flore de Mexique* was to some extent seen through its duplicate, *Flore des dames*. Thus, while the Spanish explorations in the New World resulted in “a mass of unpublished data read by a few contemporaries in the scientific world,”⁹ *Flore des dames* attracted attention from a slightly broader audience, including both professional botanists and amateurs.

Moreover, *Flore des Dames* was the fruit of the spirit of public service that Candolle valued. This spirit was further underlined by the role played by women in its production. Although probably not its initial purpose, Candolle envisioned this collection as serving to foster public-spiritedness: “Je prendrai des mesures pour qu’après moi cet ouvrage ne sorte jamais de Genève et qu’il puisse

5 Perrine Blanc, “La Flore des Dames de Genève, Patrimoine Artistique et Botanique”, *La Garantie Voyageuse*, no.127 (Automne 2019), 10–13. I thank Martin Callmänder for sharing this article.

6 *Flore du Mexique* refers to the original collection, and *Flore des Dames* refers to the copied one in this article.

7 The subtitle of Candolle’s preface indicates the four dimensions: *Collection des plantes rares ou peu connues observées au Mexique et dans la nouvelle Espagne, par M.de Sessé, Mociño et Cervantes, dessinées dans le pays par M. Echeveria [sic], Cerda, etc., copiées à Genève par une réunion des amateurs de peinture et de botanique, classées et nommées d’après les dessins et les descriptions originales par M. de Candolle*. When traveling in France and Switzerland, Candolle was a field collector, but in this case, he was a cabinet naturalist.

8 Daniela Bleichmar, *Visible Empire: Botanical Expeditions and Visual Culture in the Hispanic Enlightenment*, Chicago and London, The University of Chicago Press, 2012, 192.

9 Iris H. W. Engstrand, *Spanish Scientists in the New World: the Eighteenth-Century Expeditions*, Seattle and London, University of Washington Press, 1981, 11.

constamment y servir à l'enseignement de la Botanique, à l'avancement des arts, du dessin et à l'encouragement de l'esprit public."¹⁰

The Making of *Flore des Dames*¹¹

Influenced by Enlightenment thought, particularly the natural historical enthusiasm for “studying and recording natural resources and noting the costumes and history of a region”,¹² Spanish naturalists, usually working together with artists, traveled across the vast American colonies, where they diligently recorded their observations and collected natural objects to transport back to Spain. At the close of the eighteenth century, four interconnected expeditions targeted the extensive colonies half a world away from Spain: Hipólito Ruiz (1754–1815) and José Pavón (1754–1840) led a botanical expedition to Chile and Peru between 1777 and 1788. Then, Celestino Mutis (1732–1808) directed a longer-lasting exploration of the New Kingdom of Granada, spanning over thirty years (1783–1816). Martín de Sessé y Lacasta (1751–1808) and José Mariano Mocino (1757–1820) conducted the Royal Botanical Expedition to New Spain between 1787 and 1803. Finally, Alejandro Malaspina (1754–1810) led a relatively short naval expedition from 1789 to 1794. Each of these voyages was authorized by the Spanish monarchy and was characteristic of the Spanish approach to natural history during this era.¹³

Against the backdrop of this zeal for surveys, the origins of *Flore des Dames* can be traced to the Royal Botanical Expedition to New Spain. While its name underscores the mission's primary destination, the expedition traveled widely, including into (central, western, and southeastern) Mexico, Central America, Cuba, Puerto Rico, and Costa Rica, even ranging as far as California, southern Alaska, and Nootka. Before 1792, members of the team undertook three separate excursions. During the First Excursion (August 1787–1788), they collected natural objects and painted pictures in the Valley of Mexico and its surrounding mountains, eventually extending their survey to cover more remote locations such as Yacapixtla. The Second Excursion (March–December 1789) saw the team venture from Mexico to Acapulco, and Cuernavaca, reaching into the

10 Hervé M. Burdet, “Le Récit par Augustin Pyramus de Candolle de l'Élaboration de *La Flore Du Mexique*, dite aussi *Flore Des Dames de Genève*”, *Anales Jardín Botánico de Madrid* 54 (1996), 575–88. In this paper, Burdet transcribed the manuscript of Candolle's preface *Flore du Mexique* and added extensive notes about the characters and events mentioned by Candolle.

11 For a detailed history of *Flore des Dames*, see Burdet, “Le Récit par Augustin Pyramus de Candolle”. Patrick Perret, “La Flore des Dames de Genève”, *Musées de Genève*, no. 284 (1988), 17–21. Hunt Institute, *Persons, Collection, and Topics: Toner*, <https://www.huntbotanical.org/art/show.php?10>, accessed on 06.12. 2023.

12 Engstrand, *Spanish Scientists in the New World*, 4.

13 Bleichmar, *Visible Empire*, 18–23.

uplands of Guerrero. Finally, in the Third Excursion (May 1790–early 1792), the explorers expanded their efforts from Mexico City to cover the Pacific Coast. After these excursions, the team’s activities became less coordinated.¹⁴

Many botanists refer to this expedition as the Sessé and Mociño Expedition to highlight the role of the two prominent naturalists. Sessé, a Spanish botanist, served as the principal director. After moving to New Spain, he conceived an ambitious plan to undertake a comprehensive investigation of the region’s natural products, especially its botanical resources. With the cooperation of Casimiro Gómez Ortega (1741–1818), then the director of the Royal Botanical Garden in Madrid, Sessé gained approval from the Spanish king Charles III (i.e., Carlos III, 1716–1788), who sanctioned the expedition with his first order on October 27, 1786, when Sessé began to prepare. Mociño, who had grown up in Mexico, joined the team in 1790. He attended the course on Botany given by Vincente de Cervantes (1755–1829) at the botanical garden, which was founded by Sessé and Cervantes at the outset of the expedition, and where Cervantes spent considerable time.¹⁵

Mociño quickly became a competent field naturalist. After 1792, Sessé and Mociño often worked separately in various locations. For instance, from 1795 to 1798, Sessé led part of the team to Cuba and Puerto Rico, accompanied by the artist Atanasio Echeverría y Godoy (b. and d. unknown). Around the same time, Mociño traveled to Guatemala, San Salvador, and Nicaragua with the other part of the team, and worked with Díos Vicente de la Cerda (b. and d. unknown). Both artists had been trained at the Royal Art Academy of San Carlos in Mexico. Their main drawing work was completed between 1787 and 1799.¹⁶

The Sessé and Mociño Expedition recorded abundant first-hand observations, and the artists painted over two thousand pictures of plants and animals. These pictures were so delicate that when Alphonse checked the duplicates, he occasionally found the pubescences were very short, claiming that “un œil ordinaire armé de la loupe est seul en état de s’en apercevoir”.¹⁷ These manuscripts and icons were sent back to Spain in 1803, but neither Sessé nor Mociño had the chance to publish them. After Sessé’s death in 1808, Mociño continued to study the material with the support of Joseph Napoleon Bonaparte (1768–1844), the ruler of Spain at the time. As a result of Bonaparte’s

14 Rogers McVaugh. *Botanical Results of the Sessé & Mociño Expedition (1787–1803) I. Summary of Excursions and Travels*, Ann Arbor, University Herbarium, University of Michigan, 1977, 100, 123–124. For details about the expedition, see this document.

15 *Ibid.*, 124. Candolle only mentioned that Charles IV supported this expedition in his autobiography, see Candolle, *Mémoires et Souvenirs*, 279.

16 McVaugh, *Botanical Results of the Sessé & Mociño Expedition (1787–1803) I*, 99, 105–107, 124. McVaugh introduced more team members that are often not mentioned in articles or chapters of books related to this expedition between pages 105 to 110.

17 Alphonse de Candolle, “Calques des Dessins de la *Flore du Mexique*, de Mociño et Sessé, qui ont Servi de Types d’Espèce dans le *Systema* ou le *Prodrômus*”, in *Flore des Dames* vol.1.

sponsorship, Mociño was forced to leave Madrid when the French army evacuated Spain in 1812, taking refuge in Montpellier.

In the same year, Candolle, then professor of botany at the Faculty of Medicine in Montpellier, took charge of the botanical garden. Candolle had already heard about their expedition before meeting Mociño and was impressed by a collection of 1'300–1'400 colorful pictures that Mociño showed him, representing numerous species of America he had not previously seen.¹⁸ Mociño, for his part, trusted Candolle because the latter had a reputation for describing and naming plants, and he allowed Candolle to use *Flore du Mexique* to study American plants, absorb the related species into his taxonomic system, and publish his research.¹⁹

When Candolle was forced to return to Geneva in 1816 due to shifting political conditions, Mociño was old, nearly blind, and supposed that he would die abroad. He therefore entrusted Candolle with all his botanical paintings and asked him to continue his research. What Mociño did not expect was that he would have the chance to return to Spain the following year. After deciding to do so, Mociño wrote to Candolle to ask the *Flore du Mexique* back, so that he could take it with him to Spain. Fortunately, over one hundred enthusiasts, artists, and students from the École de Dessin copied images from *Flore du Mexique* “pendant une dizaine de jours”²⁰ before it was given back, leaving Candolle with a duplicate. About forty of these duplicate paintings are unique as the originals are missing.²¹

Candolle bound the thirteen volumes of *Flore des Dames* in scarlet hardcover. Volumes two to thirteen contain illustrations, some of which were adorned with botanical descriptions written on small, uniformly-sized pieces of paper.²² Candolle numbered them all from 1 to 1'337, and applied different suffixes to the same Arabic numeral to distinguish multiple copies of the same original. For example, students of the École de Dessin reproduced sixteen copies of number 550 from the front and back, which Candolle numbered 550-s1r, 550-s1v to 550-s8v. Of these paintings, 78 were produced by the professional painter Toussaint-François Node-Véran (1773–1852), whom Candolle recruited in Montpellier, 305 were originals given to Candolle by Mociño, and the rest

18 Candolle, *Mémoires et Souvenirs*, 279–280. If Candolle's count was accurate, this was merely a part of the entire collection, as the Torner collection comprises approximately 1'800 botanical paintings according to Rogers McVaugh, “The Lost Paintings of the Sessé & Mociño Expedition: A Newly Available Resource”, *Taxon* 31, no. 4 (November 1982), 691–692.

19 Burdet, “Le Récit par Augustin Pyramus de Candolle”. Candolle, *Mémoires et Souvenirs*, 280.

20 Candolle, *Mémoires et Souvenirs*, 342.

21 At least as this article is being written, these original paintings are missing from the digitized collection of the Hunt Institute.

22 Now the paintings and small pieces of paper have been removed from the original containers and are stored separately in CJBG. See Can.5.1.2/Rp120.



Fig. 1 The left picture is *Flore des Dames* 16, Genève, Conservatoire et Jardin botaniques de Genève, *Flore des Dames de Genève*, f. 16r (www.e-codices.ch); the right image is Torner Collection no. 6331.1969 (The Torner Collection of Sessé and Mociño Biological Illustrations, Courtesy of Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, PA).

were copied in Geneva. However, 99 paintings listed in the first volume of *Flore des Dames* are missing.

The original drawings have counterparts at the Hunt Institute, as the artists painted duplicates of the same plant during the expedition, in order to distribute them. The originals all have rectangular frames with the icons in pencil.²³ Some painters made the duplicates as similar as possible to the originals, but since time was short, others kept the form of the plant while largely omitting the coloration regardless of whether the whole plant or only part of it was colored in *Flore du Mexique*. Sometimes, they even simplified the form of the plant, retaining only identifying characteristics (fig. 1). This was similar to how Spanish naturalists and artists worked together as “natural historical duets”²⁴ in the Royal Botanical Expeditions, as artists adopted various strategies to deal with limited time in the field.²⁵

23 I thank Pierre Boillat for pointing this out to me.

24 Bleichmar, *Visible Empire*, 90.

25 *Ibid.*, 90–103.

In the years following their acquisition of the copied pictures, Candolle and his son Alphonse enriched this material with comprehensive background information. In addition to its preface, the first volume of *Flore des Dames* comprises three handwritten catalogs, a printed article, and 39 plates containing anatomical drawings of selected plants from *Flore du Mexique*. These plates are original creations, with 37 bearing the signature of Node-Véran. Thus, readers could find out what plants they identified, who had copied which picture, whether a painting was original, a reproduction, or a sketch, and whether it had gone missing.

Studying Plants Based Merely on Drawings

Icons are critical in the production and dissemination of botanical knowledge. Candolle viewed them as part of the theory of descriptive botany, showing that

les descriptions les plus complètes et les plus exactes sont encore bien loin de faire connaître une plante, aussi bien que la vue de ses formes générales. C'est pour suppléer à cette insuffisance des descriptions, que, dès la naissance de la Botanique, on a eu l'idée d'y joindre les figures (Icones) des plantes...²⁶

In arguing that images mattered greatly in eighteenth-century natural history, Bleichmar took Candolle as a dramatic example of the use of visual materials to conduct long-distance observation of American flora.²⁷

Starting from 1813, when Candolle first encountered *Flore du Mexique*, he meticulously studied it, along with his colleague Michel Félix Dunal (1789–1856) and his student Louis Théodore Frederic Colladon (1792–1862).²⁸ Combining first-hand materials with theoretical research, Candolle welcomed the opportunity to practice natural classification methods on many tropical species that were new to him. Moreover, they used data from *Flore du Mexique* when publishing monographs on specific plant families, and Candolle wanted to produce a general work:

le zèle même que je mettais à débrouiller la flore de Moçinno [sic] se liait dans mon esprit à une immense entreprise que je méditais alors. Frappé du décousu de tous les ouvrages généraux de botanique et de la nécessité d'en avoir enfin un rédigé d'après les principes de la méthode naturelle non seulement dans l'ensemble mais dans les

²⁶ Augustin-Pyrame de Candolle, *Théorie Élémentaire de la Botanique, ou Exposition des Principes de la Classification Naturelle et de l'Art de Décirer et d'Étudier les Végétaux*, Seconde édition, revue et augmentée, Paris, chez Deterville, 1819, 310.

²⁷ Bleichmar, *Visible Empire*, 70.

²⁸ Burdet, "Le Récit par Augustin Pyramus de Candolle".

détails, je me décidai à me dévouer pour faire une énumération générale des végétaux du monde.²⁹

Candolle viewed *Théorie Élémentaire de la Botanique* (1813) as the preface to this general work. Furthermore, he nursed the great ambition to describe all seed plants known in the world and spent the rest of his life working on this plan. He first published *Regni Vegetabilis Systema Naturale* (1818, 1821) and then collaborated with other botanists, especially his son Alphonse, to produce the monumental seventeen-volume *Prodromus Systematis Naturalis Regni Vegetabilis* (1824–1873).

Initially, Candolle attempted to study American plants mainly on the basis of paintings and manuscripts produced during the expedition. However, those written materials were unavailable to most scholars until the Sociedad de Historia Natural de México partially published them at the end of the nineteenth century.³⁰ Francisco Antonio Zea (1766–1822), a botanist who had come to Montpellier with Mociño, obtained some manuscripts stored in the basement of the Tuileries Palace, but Candolle found them of little use and had to rely solely on botanical drawings to identify, classify, and describe the plants. Thus, the precision of these pictures provided the foundation for Candolle's study.

Candolle affirmed that *Flore du Mexique* was a reliable source, giving his reasons in the preface:

on pouvait le juger 1° par la précision avec laquelle ceux-ci étaient représentés, 2° par la facilité avec laquelle la plupart de dessins se rapportaient à des familles ou à des genres connus et en exprimaient exactement les caractères les plus minutieux de la fleur et souvent même du fruit, 3° parce que quant aux espèces déjà connues qui se sont heureusement trouvées dans cette collection. On pouvait en comparant le dessin avec les planches et les descriptions publiées et souvent même avec les plantes vivantes s'assurer de leur exactitude.³¹

His research, in turn, helped him better understand and have a greater appreciation for earlier books about American plants, such as the posthumously published *Thesaurus Rerum Medicinalium Novae Hispaniae* [sic] by Spanish physician Francisco Hernández de Toledo (1515–1587).³²

Based on these visual materials, Candolle and his associates eventually published around 300 new tropical species in *Systema* and *Prodromus*, and Candolle made an alphabetical list of 593 plant genera in *Flore des Dames*. At the end of the eighteenth century, the famous naturalist Alexander von Humboldt (1769–1859) explored an area in America that was similar to the one explored

29 Candolle, *Mémoires et Souvenirs*, 281.

30 Hunt Institute, *Persons, Collection, and Topics: Toner*.

31 Burdet, "Le Récit par Augustin Pyramus de Candolle".

32 *Ibid.*

by the Sessé and Mociño Expedition. When Candolle presented drawings of new genera to Humboldt and his collaborator Carl Sigismund Kunth (1788–1850), they confirmed to Candolle that only a few of them were included in their collection.³³

It is unclear to what extent Candolle relied on the original drawings as opposed to the duplicates to study American plants. He had scrutinized *Flore du Mexique* before giving it back, but when Mociño died alone and in poverty in 1820, the collection disappeared from public view for 160 years, until the Hunt Institute acquired it and made it an openly accessible resource in 1981.³⁴ Nevertheless, Candolle and his son continued to consult *Flore des Dames* when developing their botanical system. Candolle recalled: “J’ai fait et fais encore usage de ces matériaux dans le *Systema*, le *Prodromus*, et quelques mémoires spéciaux et j’y trouve souvent des détails utiles.”³⁵ When it comes to determining new species, this raises the question for scholars of whether the original or a replica was used as the type.³⁶

The results of the study were concisely presented in the *Catalogue des dessins & des descriptions d’espèces de la Flore du Mexique distribuée d’après l’ordre de la Théorie Élémentaire*.³⁷ The first column in this table displayed the number corresponding to plant species (from 1 to 1301).³⁸ Candolle rearranged the copied paintings and gave them new numbers, replacing the original Linnaean order with a new order based on the affinities between plants according to Candolle’s theory. The second column contains the plant names grouped into 112 botanical families, while the Roman numerals in the third column correspond to the numbered plates in the first volume. For the plant descriptions in the fourth column, Candolle and Alphonse cited page numbers from *Systema* and *Prodromus*, and Alphonse probably revised some of the names. For instance, plant 813 was originally labeled *Spigelia Dichotoma*, but then *Spigelia hedytidea* A.DC. was added in a different hand.³⁹

At the time, the *Prodromus* was an essential reference to botanists. Unfortunately, as time wore on, many species identified through *Flore du Mexique* or *Flore des Dames* were no longer recognizable from the verbal description, making the *Prodromus* less useful for researchers. Worse still, some botanists failed to recognize certain species from the description in the *Prodromus* and published them again as if they were new discoveries. To alleviate this

33 *Ibid.* Hunt Institute, *Persons, Collection, and Topics: Toner*.

34 McVaugh, “The Lost Paintings of the Sessé & Mociño Expedition”.

35 Candolle, *Mémoires et Souvenirs*, 344.

36 McVaugh, “The Lost Paintings of the Sessé & Mociño Expedition”.

37 Candolle published the second edition of *Théorie Élémentaire* in 1819.

38 Numbers 1302 to 1337 are sketches without information in other columns.

39 This species was first published in *Prodromus* vol. 9 and is accepted now. <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:546944-1>, accessed on 21.01.2024. A.DC. is the standard botanical abbreviation of Alphonse de Candolle.

problem via botanical drawings, Alphonse asked professional painters to produce 279 tracings – sketches copied with and on transparent paper – of 271 species from *Flore des Dames*, including 22 anatomical drawings, but without the images that had previously been published. Alphonse produced ten copies of the tracings at a cost of 1,475 francs. Between November 1874 and February 1875, he sent them to ten main institutions around the world, making them more accessible for future researchers. As he demonstrated: “il ne pouvait être question de publier des dessins aussi inégaux, soit de valeur soit d’apparence, qui souvent ne sont que des copies plus ou moins exactes des anciens originaux.”⁴⁰

The Role of Women and Candolle’s Course

Despite being a duplicate, the *Flore des Dames* became a unique resource in the history of botany because of the study by Candolle, his son Alphonse, and their collaborators. Once the *Flore du Mexique* became accessible to scholars, the *Flore des Dames* was no longer the first choice for collating information about species identified and described according to materials obtained during Sessé and Mociño’s expedition. However, as a collective project carried out by enthusiastic participants, it is still a part of Geneva’s cultural heritage, reflecting the participation of women in public life in particular. As a mark of respect and gratitude, Candolle recorded, in alphabetical order, 102 names of copiers and the numbers of their drawings: two-thirds were women.⁴¹ At a time when most named artists who painted botanical images were men, these women were entered into the public record.⁴²

Flore des Dames thus represented a major contribution by women to the production of botanical knowledge. To begin with, the idea of reproducing *Flore du Mexique* did not come from Candolle himself, but from Eugénie Michée Lavit, née de la Rive (1774–1848), daughter of Alexandre de la Rive (1726–1807), who was a citizen (the highest social category in Geneva) and a member of the Council of Two Hundred. In 1797, she married François-Philippe Lavit (1776–1852), a merchant.⁴³ Eugénie was visiting Candolle when he received Mociño’s letter asking him to return *Flore du Mexique*, and it was she who suggested copying it for Candolle. Initially, Candolle expected copies of only the most remarkable drawings, but Eugénie insisted on reproducing as many of them as possible. Highly driven, she immediately went around Geneva to recruit

⁴⁰ Alphonse, *Calques des Dessins de la Flore du Mexique*. Alphonse de Candolle, Archives Dynastie de Candolle, CJBG, Can5.1.2 BA/32.

⁴¹ It is 102 names, not 102 people, for Candolle listed names like “Melles Revilliod. Bertrand” and there were anonymous painters. Candolle and Alphonse, *Flore des Dames* vol.1.

⁴² Bleichmar, *Visible Empire*, 5.

⁴³ Candolle, *Mémoires et Souvenirs*, 341 (note 15). I thank Sylvie Moret Petrini for identifying Mme de la Rive and Amélie Pictet de Rochemont.

volunteers. Many artists and amateurs responded positively to the duplication project.⁴⁴

Candolle was responsible for sorting through the pictures to reduce the copiers' workload by eliminating unremarkable ones, such as common plant figures. He also purchased all the necessary paper from local paper dealers and supervised the painters to ensure they faithfully captured the plants' key features. All of Geneva seemed to rally around the project: "Those who could paint drew the outlines; those who could not draw, traced; those who could not trace made themselves useful by carrying the drawings backward and forward."⁴⁵ Candolle's wife, Fanny Françoise de Candolle née Torras (1782–1854), assisted in distributing the original drawings and paper. The result was a lively scene: "les jeunes demoiselles se réunissaient chez l'une d'elles en ateliers pour travailler en commun."⁴⁶ Candolle had the impression that "la ville entière fut occupée de ce travail pendant une dizaine de jours et le zèle qu'y apportaient toutes les personnes qui savaient manier un crayon ou un pinceau était réellement touchant".⁴⁷

The participants' enthusiasm for the reproduction work stemmed not only from their friendship with Candolle but also from a deepening appreciation for botanical knowledge in general and paintings depicting rare American plants in particular. In 1817, Candolle launched a paid botany course open to the public, welcoming anyone interested in plants to register, regardless of age or gender. This program gave a boost to Candolle's income, adding 4'000 francs to his usual annual professorial salary of 1'500 francs at the Academy of Geneva. Nearly a hundred people attended his course at a cost of 48 francs a person. Botanical knowledge and fashion spread outside the classroom through social and familial ties, and Candolle expanded his social network in Geneva's upper class.⁴⁸

Candolle's excellent lectures directly impacted the making of *Flore des Dames*, and some audience members worked as copiers on the project. Candolle showed some original drawings from *Flore du Mexique* in his class. These images captivated his audiences, sparking a special interest among two talented women, Sophie-Eléonore Lamont (1774–1827), known as Mme Tollot, a Genevan citizen married to Jean-Gavriel Tollot (1762–1827), a member of the Geneva Representative Council and Jeanne-Marie-Madeleine Sales (1772–1848), whose father Pierre Sales (1749–1827) worked as an assistant of the Council of Two Hundred. They chose the same pictures to reproduce, and their rivalry drew public

⁴⁴ Candolle, *Mémoires et Souvenirs*, 341–342.

⁴⁵ Edgeworth, *The Life and Letters*, 288.

⁴⁶ Candolle, *Mémoires et Souvenirs*, 342.

⁴⁷ *Ibid.*

⁴⁸ Candolle, *Mémoires et Souvenirs*, 339–341.

attention to *Flore du Mexique*.⁴⁹ Mme Tollot and Mlle Sales went on to become key contributors to the duplicate project, copying 53 and 11 icones, respectively. Mme Tollot produced the most plates, with the exception of the artist Node-Véran.

The Candolle family archives hold course notes written by three women in different styles. Amélie Odier (1786–1840), the daughter of the Genevan magistrate and doctor Louis Odier (1748–1817), compiled the most extensive notes across five notebooks, each exceeding 80 pages (22 x 18 cm). It seems that she recorded almost every word she could catch from the lectures, dedicating five pages to the first lesson alone.⁵⁰ In contrast, Nancy Fatio, whose background remains unclear, used slightly larger paper (25 x 19 cm), but confined her notes on the same lesson to just one page. Her approach yielded 162 pages of more concise notes, summarizing the key points in handwriting that was notably clearer than the other two note-takers'.⁵¹

The third set of notes is attributed to Junie Soret Odier (Anne Louise Junie Soret, née Odier, 1795–1859), Amélie Odier's sister, who married Nicolas Marie Soret in 1824. This set of notes features an annotated title page (likely by the collector): "Doit être de Madame Junie Soret Odier extraits du cours de Mr de Candolle. Le même dont [nous] avons [des] extraits de sa soeur Mlle Amélie Odier." At the end, Julie Odier appended a table of contents, providing a clear overview of Candolle's curriculum.⁵²

Titled "Cours de Botanique et de Physique Végétale," Candolle's course addressed 25 topics divided into three main themes: an introduction to plant organs, the classification of plants according to classes and families, and descriptions of prominent plant families, essentially mirroring the contents of his *Théorie Élémentaire de la Botanique*. Additionally, Candolle reserved the last two lectures for phytogeography. In essence, he discussed most of the branches of botanical knowledge that concerned him. A few similar anatomical plant diagrams in the three sets of notes suggest that Candolle likely incorporated illustrations into his lectures, with Nancy Fatio demonstrating more talent in painting (fig. 2).⁵³

This course started on February 1 and consisted of 37 lessons, typically lasting an hour, on Wednesday, Thursday, and Saturday afternoons.⁵⁴ The last documented date is April 19, marking lesson 33.⁵⁵ Since the dates for lessons 34–

⁴⁹ *Ibid.*, 341.

⁵⁰ Amélie Odier, Archives Dynastie de Candolle, CJBG, Can.1.3.1/BA 74.

⁵¹ Nancy Fatio, Archives Dynastie de Candolle, CJBG, Can.1.3.1/BA 67, CJBG.

⁵² Junie Soret Odier, Archives Dynastie de Candolle, CJBG, Can.1.3.1/BA 73.

⁵³ Junie Soret Odier, Can.1.3.1/BA 73. Amélie Odier, Can.1.3.1/BA 74. Nancy Fatio, Can.1.3.1/BA 67.

⁵⁴ Candolle, *Mémoires et Souvenirs*, 340 (note 11).

⁵⁵ Amélie Odier, Can.1.3.1/BA 74.

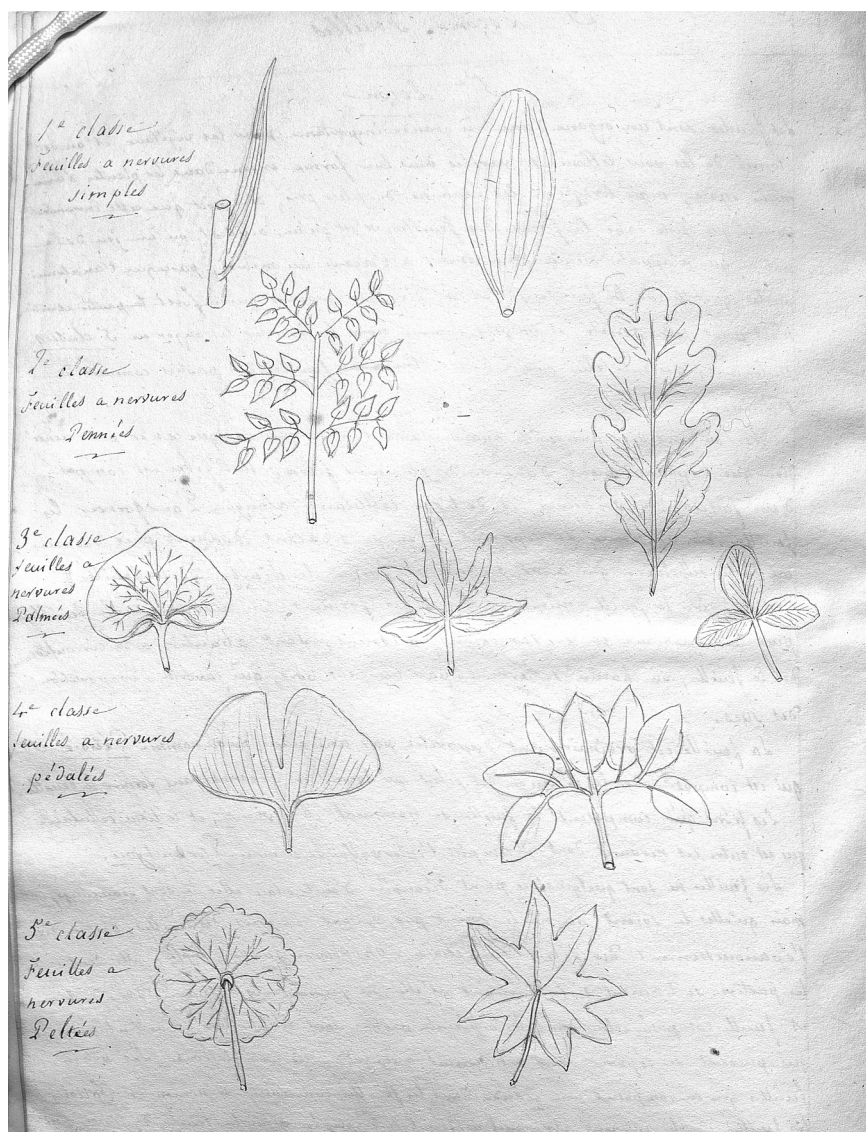


Fig. 2 Drawings in Nancy Fatio's notebook (Archives; © Conservatoire et Jardin botaniques de Genève).

37 are not recorded in the notes, it is unclear when the lecture series concluded. We do know, however, that Candolle arrived in Montpellier on May 1 to return the original drawings to Mociño as mentioned in his autobiography: "J'arrivai à

Montpellier le 1^{er} de mai et j'y fus reçu d'une manière fort aimable par mes collègues et mes amis."⁵⁶

While the exact end date of the course remains uncertain, the timeline of the course and the duplication project clearly overlapped, indicating their close relationship. Candolle successfully attracted helpers through his lessons, while the painters' work was enhanced by their understanding of botanical knowledge. In addition to the abovementioned Mme Tollot and Mlle Sales, who were both copiers and Candolle's students, one of the note-takers, Junie Odier, was probably the "Odier (Junie)" listed by Candolle in the catalog, who reproduced seven paintings for *Flore des Dames*. Candolle also recorded a painter by the name of Mme Fatio, but there is currently no evidence linking her with Nancy Fatio.

The Social Context of Elite Gevevan Women Participating in *Flore des Dames*

Candolle's catalog of painters presented female copiers—who at the time usually lived a domestic life—to the public. Instead of working for a family member as wives, mothers, daughters, or sisters, they took on some responsibility within the broader community. Their contribution was formally acknowledged, and they took their place in the history of botany. Unfortunately, Candolle typically referred to people by their family names in his works. As a result, except for a few notable figures such as Suzanne-Elizabeth Eynard-Châtelain (1775–1844), a pastor's daughter who was a professional painter and teacher at the École de Dessin, and Jeanne Henriette Rath (1773–1856), an artist with an extensive professional career who contributed a donation to establish the Rath Museum in Geneva that continues to operate today, these women tended to be perceived as a group rather than distinct individuals.⁵⁷

These ladies had a range of backgrounds but primarily came from the middle or upper class of Genevan society, leaving aside foreigners like Mme Morstyn. They were often connected to families that had made distinguished contributions to politics, the economy, the military, religion, and academia. For example, Amélie Pictet de Rochemont's (1791–1892) father was Charles Pictet de Rochemont (1755–1824), a Genevan politician who entered the Conseil des Deux-Cents in 1788, and her uncle, Marc-Auguste Pictet (1752–1825), served as the president of the Société des Arts from 1799 until his death.⁵⁸ Another example was Eugénie Louise Saladin, who hailed from a wealthy bourgeois

⁵⁶ Candolle, *Mémoires et Souvenirs*, 344.

⁵⁷ <https://100elles.ch/biographies/jeanne-henriette-rath/>, accessed on 03.05.2024.

⁵⁸ <https://www.bge-geneve.ch/iconographie/personne/amelie-pictet-de-rochemont>, accessed on 15.05.2024.

family active in the banking sector and international trade. Her father, Antoine Saladin (1755–1843), was an aristocrat, and her grandfather was a member of the Council of Two Hundred, who worked as trustee of the first Syndic of Geneva and participated in the formation of the Small Conseil.⁵⁹

As for those women whose identities remain elusive, their last names evoke some important Genevan families. For example, the Lullin family was one of the oldest and wealthiest families at the time, of which some members had a taste for arts or painting talent.⁶⁰ Members of the Prevost family had served for many centuries as magistrates, teachers, and doctors, and members of families such as the Diodati and Rilliet had entered the Council of Two Hundred or the Small Council or became members of the Geneva Representative Council.⁶¹

Details about the daily lives of the female painters are scarce, but they generally enjoyed a good social status. To understand why these women were both interested in and capable of taking part in a project related to the production of botanical knowledge, it is essential to contextualize their efforts within their historical and social environment. The success of *Flore des Dames* was largely due to Candolle's charisma: the allure of his lectures, his passion for knowledge, and his concern for public life. Researchers have described him as exemplifying the enthusiasm of the nineteenth-century *savant-citoyen*.⁶² The botanical knowledge to which Candolle devoted his life was an important branch of natural history that attracted widespread attention throughout Western Europe.⁶³

For example, between 1760 and 1815, educated people in France, who called themselves “enlightened,” displayed an intense passion for the plant kingdom, and various types of publications on this theme sold strongly. People of all classes, including women of rank, filled their natural history cabinets with natural objects, plant-related topics were common in letters and conversations,

59 Fabrice Flückiger, “Saladin”, in *Historical Dictionary of Switzerland (DHS)*, version of 01/29/2013. Online: <https://hls-dhs-dss.ch/fr/articles/025560/2013-01-29/>, accessed on 14.01.2024. <https://gw.geneanet.org/rossellat?lang=en&p=eugenie+louise&n=saladin>, accessed on 03.05.2024.

60 James Gallife, *Notices généalogiques sur les familles genevoises: depuis les premiers temps jusqu'à nos jours* vol.1, Genève; Paris, J. Barbezat, 1829, 112. Danielle Buysens and Claude Lapaire, *La question de l'art à Genève: du cosmopolitisme des Lumières au romantisme des nationalités*, Genève, La Baconnière Arts, 2008, 78.

61 Jacques Barrelet, “Prevost (GE)”, in *Historical Dictionary of Switzerland (DHS)*, version of 03.15.2012. Online: <https://hls-dhs-dss.ch/fr/articles/025553/2012-03-15/>, accessed on 05.15.2024. Micheline Tripet, “Diodati”, in *Historical Dictionary of Switzerland (DHS)*, version of 06.23.2004. Online: <https://hls-dhs-dss.ch/fr/articles/025501/2004-06-23/>, accessed on 05.15.2024. Liliane Mottu-Weber, “Rilliet”, in *Historical Dictionary of Switzerland (DHS)*, version of 16.05.2012. Online: <https://hls-dhs-dss.ch/fr/articles/025557/2012-05-16/>, accessed on 05.15.2024.

62 Patric Bungener, Pierre Mattille, and Martin W. Callmänder, *Augustin-Pyramus de Candolle: Une passion, un jardin*, Lausanne, Favre, 2017, 33.

63 Roger L. William, *Botanophilia in Eighteenth-Century France: The Spirit of the Enlightenment*, Dordrecht, Kluwer, 2001, 1.

and botanical gardens were built for scientific instead of medical purposes.⁶⁴ After 1760, as the Linnaean method of classifying and naming plants spread, botany became a polite fashion among women in England, who were closely connected with botany and dedicated themselves to the production of botanical knowledge through various methods such as designing, painting, researching, writing, collecting, and sponsoring scientific expeditions. Their involvement was often framed in terms of moral education, discourses on maternity, intellectual pursuits, and practical applications, including agriculture, medicine, and cooking.⁶⁵

Shteir takes 1830 as the turning point after which England saw progress in defeminizing botany with the professionalization of science. John Lindley (1799–1865), a professor of botany at University College London, gardener, and orchidologist, is representative of this trend. Lindley invited female artists like Sarah Anne Drake (1803–1857) and Augusta Withers (1792–1877) to paint for him.⁶⁶ However, he also tried hard to transpose botany from the realm of polite female pursuits into the sanctuary of science. Lindley presented Candolle's natural system in his books *Introduction to Botany* (1832) and *School Botany* (1839), which prepared men for advanced botanical study, while he wrote *Ladies' Botany* (1856) for the amusement of women.⁶⁷ Nonetheless, when *Flore des Dames* was produced in 1817, plants and flora were still often associated with ladies, and botany was a field to which women had easier access.

Geneva engaged in extensive intellectual exchanges, both popular and academic, with France and England, as “a center of the republic of science,”⁶⁸ and many learned Genevans received academic training in France. Candolle, for example, pursued his career as a naturalist from 1798 to 1816 in Paris and Montpellier before returning to Geneva. Botanical books in English were also translated into French—for instance, the popular science book *An Introduction to Botany in a Series of Familiar Letters* (1796) written by Priscilla Wakefield (1751–1832), who addressed a female readership. English articles were also translated in Switzerland. During the Napoleonic era, despite diminished

⁶⁴ *Ibid.*, 1–5. For the fashion of botany and the relationship between plants and humans at the time, also see Sophie Ruppel, *Botanophilie: Mensch und Pflanze in der aufklärerisch-bürgerlichen Gesellschaft um 1800*, Vienne & Cologne, Böhlau Verlag, 2019.

⁶⁵ For a comprehensive discussion about English women's contribution to botany, see Anna B. Shteir, *Cultivating Women, Cultivating Science: Flora's Daughters and Botany in England, 1760–1860*, Baltimore, The Johns Hopkins University Press, 1996.

⁶⁶ Julia Buckley, “Margaret Meen (fl. 1775–1824), Sarah Anne Drake (1803–1857), and Marianne North (1830–1890): Three Botanical Illustrations from Women with Connections to the Royal Botanic Gardens, Kew”, in *Women in the History of Science: A Sourcebook*, ed. Hannah Wills, Sadie Harrison, Erika Jones, Farrah Lawrence-Mackey, and Rebecca Martin, London, UCL Press, 2023, 227–234.

⁶⁷ Shteir, *Cultivating Women, Cultivating Science*, 157, 163–165.

⁶⁸ Alexandra Cook, *Jean-Jacques Rousseau and Botany: the Salutary Science*, Oxford, Voltaire Fondation, 2012, 65.

interactions, a periodical reporting on British science, the *Bibliothèque Britannique*, was published in Geneva.⁶⁹

Geneva also had its own tradition of Enlightenment thinking and natural science. As early as the second half of the eighteenth century, naturalists like Charles Bonnet (1720–1793), Abraham Trembley (1710–1784), Horace-Bénédict de Saussure (1740–1799), and Jean Senebier (1742–1809) dedicated themselves to this field. Their work made Geneva a cutting-edge center of natural history. In 1791, the informal circle finally became the Société d'Histoire Naturelle, with the aim of better understanding natural history in and around Geneva. In 1793, they also founded a semi-public botanical garden, Saint Léger Garden, for research and teaching, where in 1794, the sixteen-year-old Candolle attended some fundamental lessons on botany by Jean Pierre Vaucher (1763–1841).⁷⁰ Moreover, Jean-Jacques Rousseau (1712–1778), the famous Enlightenment thinker and influential philosopher of education, was born in Geneva and deeply influenced by Genevan science. His *Lettres Élémentaires sur la Botanique*, which appeared posthumously and had a profound influence, were first published as a part of the *Collection Complete de J.-J. Rousseau* (1780–1782) in Geneva.⁷¹

In addition to the presence of figures on the cutting edge of natural history, the cultivation of the arts was another critical factor behind the city-wide participation in the production of *Flore des Dames*. At the turn of the nineteenth century, the arts flourished in Geneva, becoming an essential part of elite life.⁷² As mentioned above, some copiers of *Flore des Dames* were teachers or students at the École de Dessin, which the Republic of Geneva had established in 1748 to train artistic designers for the watch industry. It was inaugurated and began operating in 1751. In 1776, the Société des Arts was created, comprising three sections: Fine Arts, Agricultural and Domestic Arts, and Industry and Commerce. Under the administration of the Société des Arts, there was also École de Dessin d'après Nature, which merged with the École de Dessin in 1786. The combined school continued to train painters for industrial purposes, as well as to paint from nature. Toward the end of the eighteenth century, new buildings

69 Shteir, *Cultivating Women, Cultivating Science*, 83–89, 121, 255–256.

70 Steffen Ducheyne, René Sigrist and Patrick Bungener, “The First Botanical Gardens in Geneva (c. 1750–1830): Private Initiative Leading Science”, *Studies in the History of Gardens & Designed Landscapes* 28, no. 3 & 4 (2008), 332–350. Patrick Bungener, “Entre rupture et filiation, la création des Conservatoire et Jardin botaniques de Genève”, in *Naissance des Musées Modernes à Genève au XIX^e Siècle*, Danielle Buyssens, Vincent Chenal et Frédéric Elsig (ed.), Genève, Georg Éditeur, 2023, 103–129. Depending on when the garden started operating, Bungener viewed 1794 as a critical time for this garden.

71 Alexandra Cook, *Jean-Jacques Rousseau and Botany*, 65, 189.

72 Danielle Buyssens, “La question de l’art à Genève. Du cosmopolitisme des Lumières au Romantisme des nationalités”, *Culture & Musées*, no.12 (2008), 137–140. The article is a thesis report of Danielle Buyssens, and for a comprehensive discussion on this topic, see the book of the same title.

were erected for the collections and activities of this society, and this “museum” held temporary art exhibitions for amateurs.⁷³ In 1817, Candolle gave his lessons in the Salle de la Société des Arts.⁷⁴

Unlike the botanical lessons in Saint Léger Garden, which were open to private participation but excluded women, Candolle’s paid course welcomed whoever desired knowledge, embodying the progress that had been made in public education, especially women’s education. While young men could acquire a systematic education and intellectual training in the Academy, women relied heavily on domestic and unofficial forms of education. Scholars have argued that women acquired botanical knowledge purely for recreational purposes and did not learn about plants scientifically.⁷⁵ However, judging from the notes taken by the Odier sisters and Nancy Fatio, they took Candolle’s course seriously. The three sets of notes differ in style, but they are all detailed and complete, indicating that the recorders were well-educated. The Genevan upper class, to which these women belonged, paid considerable attention to their children’s education. Educators and parents in French-speaking areas thought about and elaborated on certain educational concepts in the private sphere. Under the influence of Enlightenment ideas, the education of children tended to be scientific and began to take on a professional character as in various other fields of knowledge. In particular, writing journals was used to confer moral discipline and intellectual competence on children, starting from the eighteenth century. Amélie Odier was a good example of this. She began to write a diary in 1799 at the age of thirteen, and the 400 pages of notes she recorded were partly the fruit of this writing practice.⁷⁶

Conclusion

Visuality was strongly connected with the exploration of the Hispanic world at the end of the eighteenth century.⁷⁷ As one of a series of Spanish expeditions, the Sessé and Mociño expedition saw the production of around 1,800 botanical drawings by a team of naturalists and artists. More than a decade after the end of this expedition, a group of Geneva amateurs gathered around Candolle, two-thirds of whom were women, and left behind a copy of a selection of these paintings, which was given the fitting title *Flore des Dames* in the 1980s. Both the

⁷³ Vincent Chenal, “Naissance du Musée des Beaux-Arts à Genève”, *xviii.ch* (2021), 37–53.

⁷⁴ Candolle, *Mémoires et Souvenirs*, 340, 350.

⁷⁵ Émilie-Anne Pépy, “Les femmes et les plantes: accès négocié à la botanique savante et résistance des savoirs vernaculaires (France, XVIII^e Siècle)”, *Genre & Histoire* 22 (2018), 1–16.

⁷⁶ Sylvie Moret Petrini, *L’Enfance sous la Plume: La diffusion de l’écriture éducative en Suisse Romande, 1750–1820*, Rennes, Presses Universitaires de Rennes, 2022, Chapitre IV, Chapitre X, <https://books.openedition.org/pur/159367>, accessed on 28.12.2023.

⁷⁷ Bleichmar, *Visible Empire*, 33.

originals and the copies played a role in the study of tropical plants by Candolle and his associates. Thus, during the long period in which the originals were inaccessible, *Flore des Dames* was the only resource that could be consulted by someone interested in the plants it depicts or the beauty of the drawings.

Flore des Dames was not only a product of a specific expedition, but also sheds light on the social context within which a woman initiated this duplication project and a group of women actively supported it. The background to this endeavor comprised three levels: (i) the Enlightenment thought and the fashion for natural history that spread throughout Western Europe; (ii) the tradition of natural history and art in Geneva; (iii) the high-quality education received by elite women.

Since the original paintings were made available to the public in the 1980s, the copies are no longer the first choice for botanical research, except when it comes to clarifying issues about the plant types presented in this material. However, these images still constitute a significant piece of visual cultural heritage. They are vivid, intuitive, and aesthetically pleasing, making them easy for broader audiences to appreciate, even those living in a different time. People can still admire these paintings today, and through them witness a magnificent overseas expedition, the close collaboration between field naturalists and artists painting from nature, the tireless study of armchair naturalists, the botanical enthusiasm of amateurs, and especially the active participation of Genevan women in public life and botanical knowledge production in the early nineteenth century.

Due to limited time and materials, this paper has only identified some of the women working on the duplication project, treating others as a group. It is expected that, in the future, scholars who are interested in *Flore des Dames* will be able to view all of them as distinct individuals, and the discussions about women taking part in producing knowledge will attract increased attention and receive more in-depth study.

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